

INCH-POUND

MS21402E
 31 August 2007
 SUPERSEDING
 MS21402D
 8 May 1987

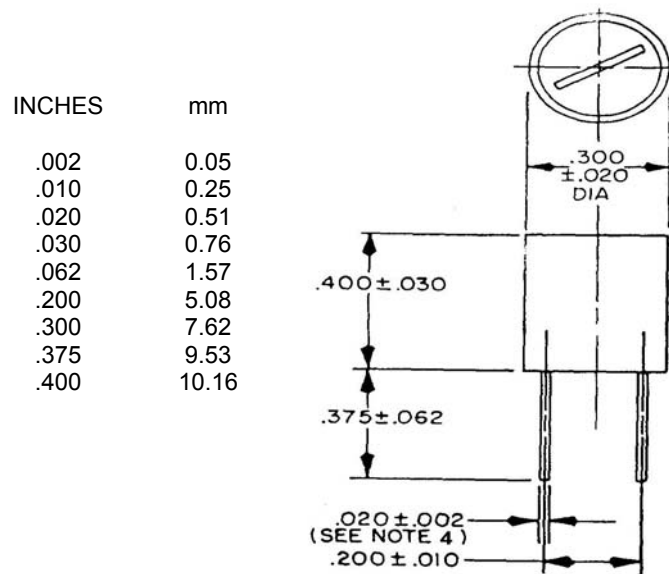
MILITARY SPECIFICATION SHEET

COILS, RADIO FREQUENCY, MOLDED, VARIABLE,
 SUBMINIATURE, FERRITE CORE, MAGNETICALLY SHIELDED,
 TYPES LT10V210 TO LT10V246 INCL.

Inactive for new design.
 after 21 february 2003

This specification is approved for use by all Depart-
 ments and Agencies of the Department of Defense.

The requirements for acquiring the products described
 herein shall consist of this specification and MIL-PRF-15305.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. These coils are intended to be mounted by their body.
4. Tinned copper lead wire, AWG number 24.

FIGURE 1. Dimensions and configuration.

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REQUIREMENTS:

Design, construction, and physical dimensions: See figure 1.

Style: LT10

Grade: 1

Class: A

Weight: 1.5 grams, maximum.

Operating temperature range: -55° to +105°C.

Ambient temperature: + 90°C, maximum.

Temperature rise: 15°C, maximum.

Terminal pull: 3 pounds minimum.

Tuning torque: 0.40 to 6 in-oz.

Working voltage: 300 V dc.

Altitude: 70,000 feet.

Shock, specified pulse: Method 213 of MIL-STD-202, test condition I, is applicable.

Dielectric withstanding voltage:

At sea level: Method 301 of MIL-STD-202, test voltage 840 V rms minimum.

At reduced barometric pressure: Method 105 of MIL-STD-202, test condition C, test voltage 630 V rms minimum.

Percent coupling: 3 percent, maximum.

Electrical characteristics: See tables I and II.

Inductance: See table I.

Q values: See table I.

Self-resonant frequency (SRF): See table I.

DC resistance (DCR): See table I.

Part or Identifying Number (PIN): MS21402 - (dash number from table I).

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TABLE 1. Electrical characteristics (initial).

1/ Dash number MS21402	Inductance tuning range (μH)			Test Frequency (L & Q) (MHz)	Q min at L nom	Minimum self resonant frequency at L nom (MHz)	DCR (ohms)	Rated DC Current (max) (mA)	Incremental Current (mA)
	L Nom	L Min	L Max						
-1	100	90	110	2.5	61	8.40	2.15	180	140
-2	120	108	132	.79	61	4.50	2.38	171	130
-3	150	135	165	.79	58	4.16	2.52	167	125
-4	180	162	198	.79	61	3.92	2.88	156	110
-5	220	198	242	.79	61	3.70	3.18	145	95
-6	270	243	297	.79	64	3.36	3.50	141	90
-7	330	297	363	.79	64	2.83	4.80	121	75
-8	390	351	429	.79	64	2.76	5.44	113	70
-9	470	423	517	.79	64	2.58	5.90	109	65
-10	560	504	616	.79	61	2.34	6.3	105	60
-11	680	612	748	.79	64	2.18	7.2	97	57
-12	820	738	902	.79	58	2.00	8.0	94	55
-13	1,000	900	1,100	.79	64	1.88	12.0	76	43
-14	1,200	1,080	1,320	.25	61	1.76	13.5	72	40
-15	1,500	1,350	1,650	.25	58	1.52	16.5	65	37
-16	1,800	1,620	1,980	.25	64	1.44	18.0	62	35
-17	2,200	1,980	2,420	.25	64	1.36	20.5	58	34
-18	2,700	2,430	2,970	.25	61	1.20	22.5	56	33
-19	3,300	2,970	3,630	.25	58	1.12	42.0	41	25
-20	3,900	3,510	4,290	.25	55	1.02	47.5	38	23
-21	4,700	4,230	5,170	.25	55	.994	53.0	36	20
-22	5,600	5,040	6,160	.25	51	.744	62.5	33	19
-23	6,800	6,120	7,480	.25	48	.632	69.5	32	18
-24	8,200	7,380	9,020	.25	51	.600	75.0	31	17
-25	10,000	9,000	11,000	.25	45	.560	100.0	26	15
-26	12,000	10,800	13,200	.079	45	.400	64	33	19
-27	15,000	13,500	16,500	.079	45	.304	84	29	17
-28	18,000	16,200	19,800	.079	45	.288	93	27	16
-29	22,000	19,800	24,200	.079	45	.256	104	26	15
-30	27,000	24,300	29,700	.079	45	.240	173	20	13
-31	33,000	29,700	36,300	.079	45	.216	187	19	12
-32	39,000	35,100	42,900	.079	45	.208	220	18	11
-33	47,000	42,300	51,700	.079	45	.200	253	17	10
-34	56,000	50,400	61,600	.079	45	.192	285	16	9
-35	68,000	61,200	74,800	.079	39	.160	311	15	8
-36	82,000	73,800	90,200	.079	39	.152	385	14	7
-37	100,000	90,000	110,000	.079	39	.136	420	13	6

1/ The dash number added to the MS military standard number constitutes the MS part number, for example MS21402-1

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TABLE II. Electrical characteristics (final).

Inspection group	Allowable variation from Initial measurement		Allowable percent from specified minimum value in electrical characteristics (initial) table	
	Inductance ^{1/} (percent)	DC resistance	Self-resonant frequency	Q
Qualification inspection				
Group II	±2	---	---	-10
Group III	±10	±(5% +.001 ohm)	-15	-20
Group IV	±5	±(2% +.001 ohm)	-8	-20
Conformance inspection group C				
Subgroup I	±2	---	---	-10
Subgroup II	±5	±(2% +.001 ohm)	-8	-20
Subgroup III	±10	±(5% +.001 ohm)	-15	-20

^{1/} Initial inductance shall consist of testing the variable for the inductance range; equal to or less than MIN. L and equal to or more than MAX. L.

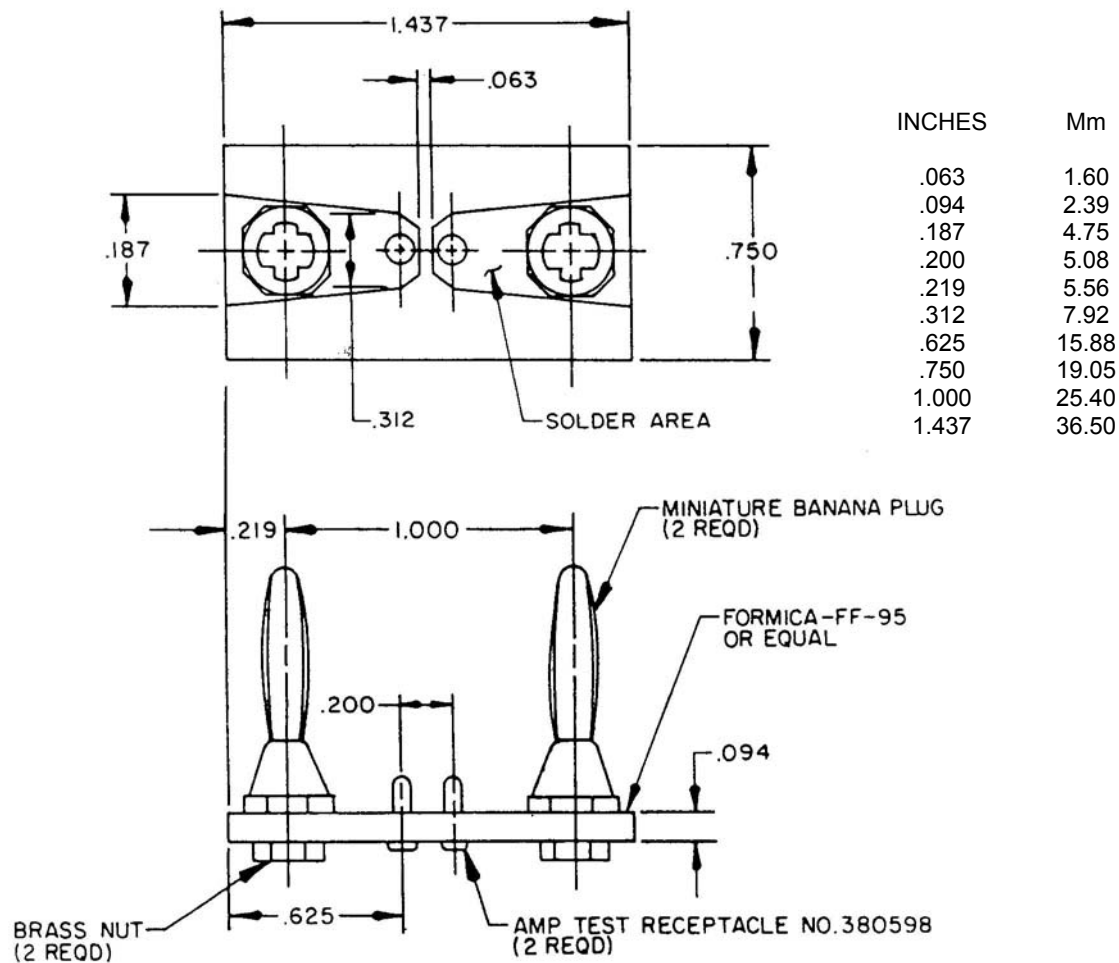
The variable shall then be set to the nominal inductance.

The remaining applicable electrical characteristics shall be read without readjusting the unit.

Allowable variation from initial inductance shall be the percent change between nominal inductance and the final inductance reading.

The variable shall not be reset or adjusted between initial and final inductance tests.

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NOTE: Tolerance is ± 0.005 (0.13 mm).

FIGURE 2. Test fixture for electrical measurements.

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Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents.

MIL-PRF-15305
MIL-STD-202

Custodians:

Army – CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA – CC

(Project 5950-2007-022)

Review activities:

Air Force – 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.